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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,771	09/15/2000	Brian Chorley	MSI-27	3569

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EXAMINER

LEE, DIANE I

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 04/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/529,771

Applicant(s)

CHORLEY ET AL.

Examiner

Diane I. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-6 are presented for examination.

Claim Objections

2. Claim 3 is objected to because of the following informalities:

(a) Claim 3, line 2: "one either side" should be changed to --one on either side--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaule et al. [US 5,509,691-referred as Kaule] in view of Chen [US 4,792,667, admitted by the applicant].

Kaule discloses a security thread (see figures 1-2) comprising:

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A magnetic layer 12, 13 sandwiched between protective layers (2, 3 or 8, 9), wherein the thread further comprises a metallization layer 10, 11 between the protective layer and the magnetic layer (see figures 1-2).

Kaule does not disclose the protective layer is piezoelectric polymer having poled and unpoled regions.

Chen discloses a method and apparatus for authenticating a security materials, such as identification card, passports, or credit card, having a photograph 3 which has been covered by the protective layers, i.e., transparent polymeric material 5 (see col. 5, lines 4+ and figure 1-3), wherein the at least one of the protective layer is a piezoelectric polymer (see 1, lines 11+, lines 59+; col. 4, lines 3+; col. 5, lines 23+; col. 6, lines 32+; and figures 1-7). Wherein the polymeric material can also be polarized partially such that the document forms a pattern by controlling the application of the polarization field, i.e., a pattern is formed with some of the areas being poled and the remaining areas being substantially non-poled (see col. 6, lines 33+ and figure 6).

In view of Chen's teaching, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the piezoelectric polymer on both protective layers of Kaule as an authenticating means to utilize in verifying the security thread. Such modification would have increased security the security measure of the security thread. Accordingly, it would have been an obvious expedient.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaule as modified by Chen as applied to claim 1 above, and further in view of Lawandy [US 6,259,506]. The teachings of Kaule as modified by Chen have been discussed above.

Although Chen disclose the poled and unpoled regions of the protective layer is piezoelectric polymer forming an invisible pattern to display different characteristics with respect to the level and

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polarity of current generated (i.e., by controlling the application of the polarization field, a pattern of poled areas can be formed, with the remaining areas being substantially non-poled (see col. 6, lines 33+ and figure 6), Kaule as modified by Chen does not disclose the poled and unpoled regions of the piezoelectric polymer forming a binary or tertiary code.

Lawandy discloses a multilayered security thread 1 having a metal layer 16 covered with protective layer layers 10, 12. The protective layer having a polymeric material such as a liquid crystal (LC) material 10a which provides the same function of the piezoelectric polymer (see figure 1A and 1B). Wherein the LC layer having regions 1a without the LC domains 10a and regions 1b with the LC domains 10a. Therefore, only in the regions 1b that containing the LC domains 10c are polarized in the presence of the electric field such that the LC layers 10, 12 are patterned in accordance with a bar code (see col. 7, lines 54+ and figures 2C-2D).

It would have been would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the encoding technique with polymeric material as taught by Lawandy in the teachings of Kaule as modified by Chen in order to encode additional validating data (i.e., such as the denomination, serial number, and other desired information) on the security in order to increase the authenticity of the security thread.

Allowable Subject Matter

7. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the best prior art of the record, Kaule as modified by Chen and Lawandy, fails to teach or fairly suggest the

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security thread having a metallization layer between the piezoelectric polymer layer and the magnetic layer acts as a ground electrode for the piezoelectric layer, as set forth in the claim.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lehureau et al. [US 5,566,982], Brown [WO 97/07478], Schneider [US 4,763,927], Chorley [US 6,127,034], Long et al. [US 4,579,371], Charigny [US 4,954,811], Jarvis et al. [US 4,539,554], and Kaule et al. [US 5,112,672] discloses a security thread having a plurality of layers with a magnetic material layer and/or piezoelectric material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diane I. Lee whose telephone number is 703-306-3427. The examiner can normally be reached on Monday through Friday from 6:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 703-305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Diane I. Lee
Examiner
Art Unit 2876

D.L.
April 25, 2002